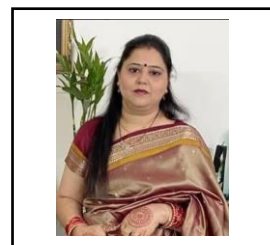


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**DOB: 6<sup>th</sup> January 1979**



### **Educational Qualifications**

#### **Ph.D. in Physics**

Department of Physics, Panjab University Chandigarh, India  
(2011) PhD Thesis: *Phenomenology of quark mixing, lepton mixing and mass matrices*,  
Ph.D. Supervisor: Prof. M.M. Gupta & Dr. Monica Randhawa  
Qualified U.G.C. (J.R.F.) in Physics  
Qualified GATE in 2001 with a percentile 92.73

**M.Sc. Honours(Physics)**– Department of Physics, Panjab University Chandigarh, India (1999-2001) **Gold Medalist**

**Bachelor of Science (with Physics Honours)** Department of Physics, Panjab University, Chandigarh, India (1996-1999) **Silver medalist**

### **Teaching/Research Experience**

- 11 July 2013- till date  
**Assistant Professor** in Department of Physics, GGSDS College, Chandigarh  
Teaching Mechanics, Statistical Mechanics at Undergraduate level.  
Classical Mechanics, Particle Physics, and Mathematical Physics at the Post-graduate level
- July 2009- May 2013  
**Lecturer (Adhoc)** in Department of Physics, D.A.V. College, Chandigarh  
Taught Classical Mechanics, Particle Physics, and Mathematical Physics to Postgraduate MSc. Physics students
- June 2007 to June 2009  
**Meritorious Fellowship** in Department of Physics, Panjab University, Chandigarh
- July 2006 to May 2007  
Lecturer, Dept. of Physics in GCG, Sec-11, Chandigarh.  
Taught Mechanics, and Statistical Mechanics at Undergraduate level.
- July 2002 – September 2005  
**Lecturer (Adhoc)** in Department of Physics, D.A.V. College, Chandigarh  
Taught Mechanics, Quantum Mechanics, Statistical

Mechanics, Nuclear and Particle Physics to undergraduate students.

## Areas of Interest

Phenomenological Theoretical high energy Physics,  
Flavor Physics, Neutrino Physics

## Publications

### (Journal/Book Chapters)

### Journal Publications:

- Preeti, B. Singh, Neelu Mahajan, “Superconductivity and Color Superconductivity at High  $T_c$  due to Breaking of Supersymmetry” in International Journal of Modern Physics A 39, 2450009(2024).
- Preeti, B. Singh, Neelu Mahajan, “Superconductivity due to condensation of dyons” in Indian Journal of Physics, 98 (5), 1849-1855 (2024).
- Lisha, S Mehta, N Mahajan , “Journey through Gauge Theories: From Foundations to New Frontiers” arXiv preprint arXiv:2311.09658 (2023).
- Preeti, Samandeep, Neelu Mahajan, “Study of Superconductivity in Restricted Quantum Chromodynamics in non-Abelian Gauge Theory” in National 6th National Conference on Advanced Materials and Radiation Physics (AMRP 2023) in Journal of Physics: Conference Series 2663, 012008, IOP Publishing (2023).
- Lisha, Neelu Mahajan, “Investigating CP Violating Majorana Phases of Neutrinos”6th National Conference on Advanced Materials and Radiation Physics (AMRP 2023) in Journal of Physics: Conference Series 2663,012053, IOP Publishing (2023).
- Samandeep, Preeti, Neelu Mahajan, “Glancing at the Current Experimental Status of Sterile Neutrino Searches” in National Conference on Advances in Applied Sciences and Mathematics, AIP Conf. Proc. 2357, 070006-1–070006-5 (2022).
- Preeti, Neelu Mahajan “Phenomenological theory of superconductivity through Generalized Meissner Effect” in an International Peer reviewed Journal of Physical Sciences Acta Ciencia Indica, Vol XLVIII-P, No. 1 to 4, 35 (2022).
- Preeti, Samandeep, Neelu Mahajan, “Superconductivity as the consequence of condensation of monopoles and dyons in SU(2) and SU(3) gauge theories”, Journal of Emerging Technologies and Innovative Research, Vol 8, Issue 9, 137-14 (2021).
- Neelu Mahajan, Samandeep, “An Insight on SU(5)- The Prototype GUT”, Journal of Emerging Technologies and Innovative Research, Vol 8, Issue 9, 131-136 (2021).
- Samandeep, Neelu Mahajan, “Flavor mixing patterns of neutrinos: An Overview”, Journal of Emerging Technologies and Innovative Research, Vol 8, Issue 9, 146-151 (2021).
- Neelu Mahajan, “Implications of Neutrino Mixing Data on Hierarchical Texture 2 Zero Mass Matrices” Springer Nature Singapore Pte Ltd Springer Proceedings in

Physics, vol 248, page number 329-335, Springer, Singapore (2020).

- Neelu Mahajan, “Neutrinos- Past, Present and Future” in International Journal of Advance Research in Science and Engineering (IJARSE), 209-213, Volume No. 7 (2018).
- Neelu Mahajan, “Texture 5 zero lepton mass matrices” in International Journal of Pure and Applied Physics (IJPAP), 113-117, Volume 13, Number 1 (2017).
- Neelu Mahajan, “Texture specific lepton mass matrices and their implications” in International Journal of Engineering Technology Management and Applied Sciences (IJETMAS), 81-87, Volume 5, Issue 7 (2017).
- Neelu Mahajan, “Flavor Physics and texture specific mass matrices” in Science Phenomenon, Research Journal of Higher Science Quarterly Bilingual, 51-55, Volume 1, Issue 12 (2016).
- Neelu Mahajan, Monika Randhawa, M M Gupta, P.S. Gill, “Investigating texture 6 zero lepton mass matrices” in Prog. Theor. Exp. Phys. 2013, 083B02 (2013).
- Rohit Verma, Gulsheen Ahuja, Neelu Mahajan, Monika Randhawa, Manmohan Gupta, “Exploring the parameter space of texture 4 zero quark mass matrices” in Journal of Physics G: Nucl. Part. Phys. 37, 070520 (2010).
- Neelu Mahajan, Rohit Verma, M.M.Gupta, “Investigating non Fritzsche like texture specific quark mass matrices” in International Journal of Modern Physics A 25, 10 (2010).
- Rohit Verma, Neelu Mahajan, M. M Gupta, “Complete parameter space of texture four-zero quark mass matrices” in conference proceedings of XVII DAE-BRNS Symposium at Varanasi on High Energy Physics, Volume 18, 130-132 (2008).

### **Book Chapters:**

- Neelu Mahajan, “Technology and Sustainable development” in “Sustainable Development in India: Strategies and Way Ahead”, Mohindra Publishing House, page no: 344-349. ISBN:978-81-970010-1-7, 2024.
- Neelu Mahajan, “Green Technology” in “Green Fashion & Sustainability”, Abhishek Publications, New Delhi. ISBN:9789356526167, 2023.
- Neelu Mahajan, “Role of education in Empowerment of Women” in “Women Empowerment”, Nation Press Publications, New Delhi, page No 147-153. ISBN:978-93-95638-15-9, 2022.
- Neelu Mahajan, “Teaching and Learning Einstein Special Theory of relativity: A Review in Issues, Challenges and Opportunities in Science and Technology in New Era International Imprint, Page No 72-76, ISBN: 978-81-290-0251-8, 2022.
- Neelu Mahajan, “Fostering quality teaching in higher education” in “Qualitative Initiatives and best practices in

higher education Institutions” twenty-first-century publications Patiala, page no 91-94. ISBN: 978-93-90953-78-3, 2021.

- Neelu Mahajan, “Environmental Laws” in “Environmental Road Safety Education and Violence Against Women and Children, Drug Abuse”, Mohindra Publishing House, Chandigarh, ISSN: 978-93-86558-26-8, 2020.
- Neelu Mahajan, “Environmental Laws” in “Environmental Road Safety Education and Violence Against Women and Children, Drug Abuse”, Mohindra Publishing House, Chandigarh, ISSN: 978-93-82068-26-8, 2018.
- Neelu Mahajan, “Texture zeros of the lepton mass matrices” in Springer Conference Proceedings in Physics 203, 2018.
- Neelu Mahajan, “Overview of Neutrino Oscillation Experiments” in International Journal of Electronics, Electrical and Computational Science (IJEECS), 492-497, Volume 6, Issue 9, 2017.
- Neelu Mahajan, “Environmental Laws” in “Environmental Road Safety Education and Violence Against Women and Children”, Mohindra Publishing House, Chandigarh, ISSN: 978-93-82068-29-7, 2017.

**Seminars/  
Conferences/Symposiums  
(Paper Presented)**

- Presented research paper titled “Neutrinos: A brief survey from theoretical to experimental” in National Conference on trends in Science, Engineering & Management (NCTSEM22) organized by Gulzar group of Institutions, Ludhiana (Punjab) (May 31, 2022)
- Presented research paper titled “Flavor mixing patterns of neutrinos: An Overview” in the International Conference on Trends in Science, Engineering and Technology ICTSEM 21 organized by Gulzar group of Institutions, Ludhiana (Punjab) (September 17-18, 2021).
- Presented research paper titled “Implications of texture specific mass matrices on neutrinoless double beta decay” in the online National Conference Advances in Physical Science and Materials organized by PG Department of Physics, DAV College, Dasuya (May 11, 2021).
- Participated and delivered a talk titled “Neutrinos: Dirac or Majorana” in the International (ONLINE) Workshop on Emerging trends in High Energy and Condensed Matter Physics organized by GDC, Budgam, Kashmir, J&K, India, (January 11-12, 2021).
- Presented paper in Young Scientist Conference organized by Ministry of Science and Technology, Govt. of India in collaboration with VIBHA and CSIR (December 22 -25, 2020).
- Presented paper in National Science Day 2019 on Communicating Science to all organized by the

Department of Biotechnology & Bioinformatics, DAV College, Chandigarh (February 22-28, 2019).

- Presented paper in National Seminar on Emerging Research Trends in Experimental Physics organized by Department of Basic Sciences, Guru Nanak College for Girls, Sri Mukstar Sahib, Punjab (February 22, 2019).
- Presented paper in Two day International Conference on Advances in Mathematical, Physical and Computer Sciences (ICAMPCS-2018) organized by S.G.G.S. Khalsa College Mahilpur, Punjab (February 12-13, 2018).
- Presented paper in 5<sup>th</sup> International Conference on New Frontiers of Engineering, Science, Management and Humanities (ICNFESMH-2017) held at the institution of Electronics and telecommunication Engineers (IETE), New Delhi (September 17, 2017).
- Presented paper in 2<sup>nd</sup> International Conference on Advancements in Engineering, Applied Science and Management (ICAEASM-2017) at Delhi (July 02, 2017).
- Presented paper in One day National Seminar on Advancement in Science and Technology (ONSAST-2017) organized by Department of Applied Sciences, PEC University of Technology, Chandigarh (March 04, 2017).
- Presented paper in National Seminar on Emerging Trends in Nanoscience and Nanotechnology held at Department of Sciences, Guru Gobind Singh College for Women, Sector 26, Chandigarh (February 18, 2017).
- Presented paper in XXII DAE-BRNS High Energy Physics Symposium 2018 organized by the Department of Physics, Delhi University, Delhi (December 12-16, 2016).
- Presented paper in Two days National Conference on Research Trends in Physics and Electronics organized by Post Graduate Department of Physics, SGGS Khalsa College, Mahilpur (November 25-26, 2016).
- Presented paper in International Workshop on Frontiers in Electroweak Interactions of Leptons and Hadrons organized by Department of Physics, Aligarh Muslim University, Aligarh (November 02-06, 2016).
- Presented paper in 2<sup>nd</sup> National Seminar on Recent Advances in Materials Science organized by Department of Physics, GGSDS College, Chandigarh (September 17, 2016).
- Presented paper in National Conference on emerging trends in physics and Nanoscience organized by Post Graduate Department of Physics, J.C.D.A.V. College, Dasuya (March 04, 2015).
- Presented paper in International Conference on triggering discoveries in High Energy Physics held at University of Jammu, Jammu (September 09-14, 2013).

- Presented paper in National Conference in high energy physics organized by PG Department of Physics, DAV College Jalandhar (February 04-05, 2010).
- Presented paper in 3<sup>rd</sup> Chandigarh Science Congress held at Department of Physics, Panjab University, Chandigarh (February 26-28, 2009).
- Presented paper in XVIII DAE-BRNS Symposium on High Energy Physics, organized by Department of Physics, Banaras Hindu University Varanasi (December 14-18, 2008).
- Presented paper in International Workshop on Frontiers in High Energy Physics at University of Hyderabad (October 14-17, 2019).
- Presented paper in National seminar on role of higher education towards promoting environment sustainability at Government college for women, Shahzadpur, Ambala (January 24, 2020).
- Presented poster in Two-day National Symposium on Biotechnology: Trends and Innovations at Department of Biotechnology, GGSDS College, Chandigarh (February 07-08, 2020).

**Refresher  
Courses/Workshops/  
Training Programmes**

- Completed the online – NEP 2020 Orientation & Sensitization Programme under Malaviya Mission Teacher Training Programme (MM-TTP) of University Grants Commission (UGC) organized by UGC-Malaviya Mission Teacher Training Centre (MMTTC), Panjab University, Chandigarh from May 20-30, 2024.
- Attended Online two-week Refresher course in Physics organized by Teaching Learning Centre Ramanujan College, University of Delhi in Collaboration with Bhaskaracharya College of Applied Sciences, University of Delhi, And Deshbandhu College, University of Delhi under the aegis of Ministry Of Education Pandit Madan Mohan Malaviya National Mission On Teachers And Teaching from August 30- September 13, 2023.
- Attended Online two-week Interdisciplinary Refresher Course in “Advanced Research Methodology” organized by Teaching Learning Centre, Ramanujan College in collaboration with M.V.S. Government Arts & Science College (Autonomous) Mahabubnagar, Telangana under the aegis of Ministry of Education Pandit Madan Mohan Malaviya National Mission On Teachers And Teaching from May 22-June 05, 2023.
- Participated in one week on-line Short-Term Course on “Optical materials and Characterization Techniques & Synchrotron radiation and Neutron based Characterization Techniques” organized by

Department of Physics, NIT Uttarakhand from February 24 -March 03, 2023.

- Attended Online two-week Interdisciplinary Refresher Course Natural Sciences organized by teaching learning centre Ramanujan College, University of Delhi sponsored by Ministry of Human Resource Development Pandit Mohan Lal Malaviya National Mission on teachers and teaching from June 28 -July 12, 2022.
- Participated in the FDP on Information Sources and Services for Teaching, Learning and Research in collaboration with A.C. Joshi Library, Panjab University, Chandigarh conducted by Human Resource Development Centre, Panjab University, Chandigarh under RUSA 2.0 grant from February 01-07, 2022.
- Attended Seven days FDP on reengineering the role of teacher as mentor conducted by Goswami Ganesh Dutta S.D. College, Sector-32, Chandigarh in collaboration with Human Resource Development Centre, Panjab University, Chandigarh under RUSA 2.0 grant from July 22-28, 2021.
- Participated in seven days National FDP on Improving the Teaching and Research Acumen organized by Goswami Ganesh Dutta S.D. College, Kheri Gurna, Banur from June 7-13, 2021.
- Completed two-Week Interdisciplinary Refresher Course on “Advanced Research Methodology Tools and Techniques” organized by Teaching Learning Centre, Ramanujan College, University of Delhi Under the Aegis Of Ministry Of Education Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching from January 30, 2021 - February 14, 2021.
- One Week Interdisciplinary FDP on Hypothesis Testing and Techniques for Data Analysis being organized by the Department of Commerce, Shivaji College, University of Delhi in collaboration with Mahatma Hansraj Faculty Development Centre (MHRFDC), Hansraj College from March 5-11, 2021.
- Five-day FDP on Design of Experiments uses Taguchi Technique at Regional College for Education Research & Technology, Jaipur from January 26 -30, 2021.
- Attended One Week online short term course in high energy physics organized by Department of Physics, Dr. B. R. Ambedkar National Institute of Technology, Jalandhar, Punjab (India) from September 18 to September 22, 2020.
- Attended One week online short term course on Advanced Functional Materials organized by Department of Physics, Sant Longowal Institute of Engineering and Technology during September 28 to October 02, 2020.
- Attended FDP on "Open-Source Tools for Research organized by teaching learning center Ramanujan College, University of Delhi sponsored by Ministry of Human

Resource Development Pandit Mohan Lal Malaviya National Mission on teachers and teaching from June 08-14, 2020.

- Attended FDP on Teaching through E-Learning Technologies: Development of E-Content organized by IIPA Bareilly Chapter and ABV-IIITM Gwalior from May 31 -June 4, 2020.
- Attended Online Short- Term Course on Renewable energy organised by HRDC Osmania University, Hyderabad from June 18 to 20, 2020.
- Attended FDP on Mobile Application Development conducted by ICT Academy from May 06 -12, 2020.
- Attended Hands-on FDP: Data Science using Python by Department of IT, Jeppiaar Institute of Technology held from May 18-22, 2020.
- Attended Refresher course in Research Methodology in Physical and Life Sciences organized by UGC, HRDC, Panjab University Chandigarh from May 16- June 05, 2017
- Attended Orientation programme organized by UGC, HRDC, Panjab University Chandigarh from April 22- May 19, 2015
- Attended FDP workshop organized by GGSDS College, Chandigarh on November 22, 2014.

#### **Invited Talks**

- Invited talk for PGT Physics In- Service Course at K.V.3 BRD AFS, Chandigarh on December 26, 2016.
- Invited lecture under RUSA grant by D.A.V. College, Sector -10, Chandigarh on February 28 & March 01, 2017

#### **PhD Thesis**

Currently Supervising: 02

#### **Administrative Experience**

- **Head of the Department of Physics** since May 2022.
- Member, **Postgraduate Board of Studies in Physics** for the term April 01, 2019 - March 03, 2021.
- Member, **Board of Studies in Medical Physics**, Panjab University, Chandigarh for the term April 01, 2023 -March 31, 2025.
- **Sub-Registrar-Sciences** for the term June 01, 2021-September 30, 2023.
- **Coordinator - BOSONS**-The Physics Club since 2022.
- Teacher Incharge -BOSONS-The Physics Club from 2016-2022.
- **Member, Institution Innovation Council (IIC 4.0)** since 2022.
- **Member, Green Campus committee** since 2022
- **Member, Environment and Road Safety Committee** since 2021



- **Member, Technology Business Incubator (TBI)** since 2024
- **Incharge, Section allocation Committee Sciences** since 2021.
- Successfully conducted University Exams as **Center Superintendent** (CHD-28, 2017) & (CHD-19, 2019)
- Successfully conducted University Exams as **Deputy Superintendent** (CHD-33, 2018) & (CHD-31, 2019), & (CHD-31, 2022).

#### **Membership of Economic Associations**

- Lifetime Member of Indian Association of Physics Teachers (IAPT)
- Lifetime Member of Indian Physics Association (IPA)
- Lifetime Member of Chandigarh Vigyan Parishad
- Lifetime Member of Chandigarh Region Innovation and Knowledge Cluster (CRIKC) Society

**Neelu Mahajan**